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V. *A Letter from Dr. Hans Sloane, R. S. Secr. to the Right Honourable the Earl of Cromertie, in Answer to the foregoing Letter, &c.*

My Lord,

I Had the Honour to receive your Lordship's very obliging and instructing Letter, relating to Turf Boggs, or Mosses in *Scotland*, and the Wood found in them ; which I have communicated to the *Royal Society*, who commanded me to return your Lordship their most humble Thanks. I have seen many such in the North of *Ireland*, and know your Lordship's Account of them to be very exact and true. I have likewise been an Eye-witness there, that when the Turf diggers have come to the bottom, or firm Ground, by having dug out all the Earth proper to make Turf or Peat, and come to the Clay or other Soil, by draining off the Water, that then there have appeared Roots of Fir Trees, with their Stumps standing a Foot or two strait upright, and their Branches spread out on every side horizontally on that firm Surface ; as if that had been formerly the outward Face of the Ground, and place of their Growth. And I remember to have observ'd these Roots to be sometimes so near one another, as that their Branches were, as it were, matted, grew over, and gave place to one another, as we every Day see in Roots of Trees where they grow too close. I saw once the body of a Fir Tree dug up so big, as to be judg'd fit for the main Post of a Wind-Mill ; which was discover'd, as many of them, which are not found in digging Turf, are, by
the

the Grass, which grew over it being, in a very dry Summer, of a yellowish colour.

The Reverend Mr. *de la Pryme* sent me some of the Cones found with this Timber in the great Fens of *Lincolnshire*, which differed in nothing from those of the *Scotch Fir*, which your Lordship has so plentifully growing in *Scotland* at this Day, and which some Years since were judged so proper by some to afford Masts for the Navy Royal, that I think some Persons were sent thither for that purpose. But they were not able to bring about what they intended, by reason of the Difficulties in the Roads by which they were to be conveyed to the Sea; which in *Norway* I have heard is in a great measure effected by the Rivers. *Cæsar*, indeed, in his Commentaries says, that the sorts of Timber in this Island are the same as in *France*, *præter fagum & abietem*, except Beach and Fir. Your Lordship is a sufficient Witness of his mistake as to one sort of these Trees, and the Beaches in the *Chiltern* Countries near *London*, prove the same as to the other. For the uses of this under-ground Timber, besides those of other Wood, it is split into pieces; and being lighted, supplies the use of Candles. It is also made into Ropes; as may be seen in the *Museum* of the Royal Society, by a long piece of such Rope, bought by the Honourable *Edward Southwell Esq*; in *Newry* Market in *Ireland*, and presented by him to the Royal Society; the long soaking in Water having render'd the Wood of those Trees fit to be made into Ropes. This seems to prove, that as the soaking of Hemp, Flax, Aloe Leaves, &c. in Water, dissolves the pulpy part, and leaves the fibrous fit for making into Threads and Ropes, so the long soaking of Trees may make in length of Time the same, or an analogous change in those of Wood and Timber. There are some things remarkable which I will beg leave to acquaint

your Lordship with, relating to this Subject, and which, I think, are worth your Lordship's knowledge. One is, that I have seen what I thought had been pieces of Wood, not only in Clay Pits, but even in Quarries or Stone Pits, in the Blocks of Stone raised out of their *Strata*, or Layers; and have been assured by Mr. *Bellers*, he hath seen large pieces of Wood in the Stone Pits in *Gloucestershire*; and also that in *Lancashire* there is a Moss, or Turf Bogg, where the black spongy Mould, made use of for Peats, smells very strong of *Bitumen*, or *Petroleum*; of the Oil of which it yields a very great quantity by Distillation. And likewise, what the late Sir *Edward Hannes* told me, namely, that near the Lord *Blessington's* House at *Blessington* in *Ireland*, there appeared a Light where the Horses trampled with their Feet on a certain space of soft Ground. On my desire he procured me some of this Mould, which I have yet by me, and which agrees exactly in its dark colour, lightness, &c. with Peat Earth. And on Examination of this by a Microscope, I found the light proceeded from many small half transparent whitish live Worms, which lay in it.

The Blackness of the Oak, which your Lordship mentions, comes, in my Opinion, from the Vitriolic Juices of the Earth soak'd into the Oak, which being astringent is turn'd black by them. Your Lordship knows that Ink is made of Galls, an astringent Excrecence of a sort of Oak in *Turkey*, made by an Insect there; and of green Vitriol, which is made of the Pyrites dissolv'd by Rain Water, and Iron. Earth of all sorts, and even Human Calculi, and the Ashes of Vegetables, have in them Particles of Iron, in greater or lesser quantities. The Pyrites is also very common. The Particles of Iron coming to be dissolv'd by this Pyrites, Subacid, or other Salts dissolv'd by Water, or perhaps by Water itself, and carried into these Boggs, there fastens to the Tree, soaks into it, and turns it black,

These

These Particles in some River Water, fastening to the Oak Timber floated in it, give the same a darkish colour; taken notice of by Mr. *Pepys* in his Naval Memoirs of *England*, p. 71. where we are told by the most famous Ship-Builders of *England*, "That the
 " best Foreign Plank for the Royal Navy was brought
 " either from *Dantzick*, *Quinberow*, (that is *Koningsberg*,)
 " or *Riga*, of the Growth of *Poland* and *Prussia*, or from
 " *Hamburgh*; namely, that sort thereof which is Shipp'd
 " from thence of the Growth of *Bohemia*, distinguish'd
 " by its Colour, as being much more black than the
 " other, and rendred so (as is said) by its long sobbing
 " in the Water during its Passage thither.

In the Turf Boggs of *Ireland* 14 Foot deep, are found not only the Mouse-Deers Horns, mentioned in one of these Transactions, but likewise their whole Skeletons, wherein the Bones bear the same proportion to the like Bones of other Deer, as the Horns bear to their Horns, There are also found therein Gold Chains, Pieces of Money, and Roots of Heath, several *musci*, and Branches of Trees so soft, as to give no resistance to the Turf Spade: And it was told, that in cutting Turf in one, they at several Feet deep cut thro' what the *Irish* call a *Ruskin* of Butter (which was a *Firkin*, or Vessel, made of the Barks of Trees, used by the Old *Irish* for putting up their Butter.) And I remember, that in digging the wet Dock at *Deptford*, there were found at the bottom, about Nine Foot deep, Grass Leaves, Hazle Nuts, and Roots of Trees: And there also was found a Piece of Money, as they call'd it; which esteeming a Rarity, they sent to Sir *Josiah Child*. I had the Favour to have it sent me by Mrs. *Willoughby*, and it prov'd to be a Leaden Seal to some Bull of Pope *Gregory* the IX. who continu'd Pope from the Year of our Lord 1227 to 1241.

I have nothing farther to trouble your Lordship with, but some few Passages I took notice of in *Ireland's*
Itiner:

Itinerary, Vol. V. which have a near relation to these Matters, and shew the common Opinion in his Days of the cause of the destruction of Woods, the growing of Mosses and Pools ; and that, at that time, in *Wales*, the sence of the Inhabitants was, that the under-ground Trees found there had formerly grown there ; which, because they were writ by so Inquisitive and Learned a Person, and at such a distance of Time as that of the Reign of *Henry* the VIII. Your Lordship will Pardon me to subjoin them in his own Words, the Language of that time.

I am,

Your Lordship's most Obedient,

and most humble Servant,

HANS SLOANE.

Leland's
Itinerary,
Vol. V. P. 13.

“ In these Deyes in *Mone* wher they digge Turves be
“ founde greate Rootes of Trees that serve Men for
“ Wood. For after the Trees wer cut doune sogging
“ Yerth and Mofse overcoverid them, and now the
“ same Yerth parid away for Turves the old mayne
“ Rootes appere.

“ Likewise at Low Water about al the shores of both
“ Shores of *Aberdein* and *Towen Merioneth* appere like
“ Rootes of Trees.

p. 67.

“ I saw hard by on the list Honde a great Fenny
“ More, owt of wich the Inhabitanter therabout digge
“ Turfes for Fier, and by the same Fenne is a fair
“ *LLin* cawllid *LLinridde* ii Miles from *Strateflur*.

p. 68.

“ *Strateflure* is set round about with Montanes not far
“ distant, except on the West Parte, wher *Diffryn Tyue*
“ is. Many Hilles therabout hath bene well woddid,
“ as evidently by old Rotes apperith, but now in
“ them is almost no Woode.

“ The Causses be these ; First the Wood cutt down
 “ was never copisid, and this hath beene a great Cause
 “ of Destruction of Wood thorough *Wales*. Secondly
 “ after cutting down of Wooddys the Gottys hath
 “ so bytten the young Spring that it never grew but
 “ lyke Shrubbes. Thirddely Men for the nonys de-
 “ stroied the great Woddis that thei shuld not harborow
 “ Theves.

“ From *Whitchurch* a Mile and a half of I cam by the p. 75.
 “ Pale of the large Parke of *Blakmer* longging to the
 “ Erle of *Shreusbiri*, wherin is a very fair Place or Loge.
 “ The Park hath both redde Dere and falow. In the
 “ Park (as I hard say) be iii. faire Poles, of the wich
 “ I saw by the Pale the largest caullid *Blakein*, wherof
 “ the Park is namid.

“ It is to be supposid that thes Pooles for the most
 “ part in *Morisch* Groundes, and lying sumwhat in
 “ low Groundes dreane the moist Places about them.
 “ and so having no Place to issue owt stagnate there.

“ Sum be likelyhod have begon of *Marle Pittes*. For
 “ the Sandy Grounde of sum Partes of *Shropshire*, and
 “ especially of *Chestresshire* and *Lancastresshire*, wille not
 “ bere Corne plentifully but it be merlyd.

“ From *Blakemere* to *Byklem* in a Fosse iii. Miles of Sand
 “ hard by *Cholmeley*. first I saw the great numbere of
 “ Firre Trees, the wiche the Inhabitantes thereby
 “ comunely digge up for Fier Wood, but ther did
 “ I se no Fyrre Trees grouing. Oftentimes in diggin
 “ in this Mofse or More for Petes or Turves they finde
 “ the hole Trees of the first, sum short and sum veri
 “ long, without Twike or Bow, lying sumtime not a
 “ Foote, sumtime iii. or iiiii. Foote depe in the Ground.
 “ but how or when thes Trees cam doune other be
 “ Cutting or Wind Fawle no Manne ther can telle.
 “ The Wood of them in Burning favorith of Re-
 “ fine.

“ *Marle*

p. 79.

“ *Morle* (in *Darbyshire*) *Mr. Lelandes* Place is buildid
 “ saving the Fundation of Stone squarid that risith with-
 “ in a great Moote a vi. Foote above the Water, al of
 “ Tymbre after the commune sort of building of Houses
 “ of the Gentilmen for most of *Lancastreshire*. Ther is
 “ as much Pleasur of Orchardes of great Varite of Frute
 “ and fair made Walkes and Gardines as ther is in any
 “ place of *Lancastreshire*. He brennith al Turfes and
 “ Petes for the Commodite of Mosses and Mores at
 “ hand. For *Chateley* Mosse that with breking up of
 “ Abundance of Water yn hid did much hurt to Landes
 “ thereabout, and Rivers with wandering Mosse and
 “ corrupte Water is within less than a Mile of *Morle*.
 “ And yet by *Morle* as in *Hegge* Rowes and Grovettes
 “ is meately good Plenti of Wood, but good Husbandes
 “ keep hit for a Jewell.

“ *Syr John Holcrostes* House within a Mile or more
 “ of *Morle* stooode in jeopardi with fleting of the
 “ Mosse.

“ Riding a Mile and more beyond *Morle* I saw on
 “ the right hond a Place nere by of *Mr. Adderton*, and
 “ so a ii. Miles of to *Lidiate Mosse*, in the right side
 “ wherof my Gide said that ther were Rootes of Fyrre
 “ Wood.

p. 81.

“ Al *Aundernesse* for the most parte in time past hath
 “ beene ful of Wood, and many of the Moores reple-
 “ nishid with hy Fyrre Trees.